
VICTORIAN ENTOMOLOGIST

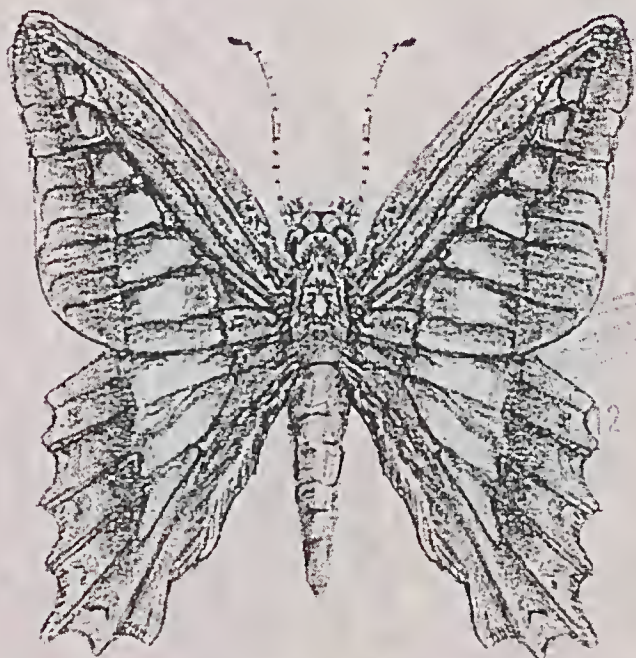


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News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species,
- (d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at La Trobe University, 2nd Floor, Room 2.29, 215 Franklin Street, Melbourne (Opposite the Queen Victoria Market) Melway reference Map 2F B1 at 8 p.m. on the third Friday of even months, with the possible exception of the December meeting which may be held earlier. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS

| | |
|------------------|--|
| Ordinary Member | \$20.00 (overseas members \$22) |
| Country Member | \$16.00 (Over 100 km from GPO Melbourne) |
| Student Member | \$12.00 |
| Associate Member | \$ 5.00 (No News Bulletin) |

Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

Cover design by Alan Hyman.

Cover illustration of the Blue Triangle butterfly, *Graphium sarpedon* L. by Rhonda Millen.

MINUTES OF THE GENERAL MEETING, 14 DECEMBER, 2001

Meeting opened at 8.10 pm

Present: P. Carwardine, D. Dobrosak, K. Dunn, I. Endersby, A. Kellehear, R. MacMahon, G. Weeks.

Visitors: M. Endersby, J. Fook.

Apologies: D. Stewart, J. Tinetti, C. Petersen.

Minutes: Minutes of the general meeting of 19 October 2001 [*Vic. Ent* 31(6): 89] were accepted (Weeks/Endersby).

Treasurers Report:

| | |
|---------------------------|--------|
| Account balances: General | \$5892 |
| Le Souëf Award | \$3599 |

Nine members were still unfinancial in October and were removed from membership.

Editor's Report:

As only one article is to hand additional contributions are required.

Correspondence:

- A thank you letter from Emma Thornton and Sarah Mitchell, winners of the Science Talent Search bursary.
- Society of Insect Studies Circular 94
- Entomological Research Society Vol 3(3)
- Australian Journal of Entomology 40(4)
- Myrmecia 37(4)

General Business:

- Tahnee Dewhurst was elected to membership (Kellehear/Carwardine)
- A membership application was received from Peter Marriott.
- Investigations into alternative accommodation are continuing.
- The excursion to Ocean Grove was enjoyed by those who attended and a report on the insects collected is being prepared.

Members' Night Contributions:

- Daniel Dobrosak projected a series of photographs taken with a Sony MVC-FD91 digital still camera and close-up lens, of insects seen during the Ocean Drove excursion;
- Kelynn Dunn presented a video of butterflies taken during a trip to Malaysia, particularly Mindanao;
- Ray MacMahon showed a collection of pinned insects that he has prepared as part of his entomological course.

The meeting was closed for supper at 9.30 pm.

Courtship and Mating Behavior in *Candalides* (*Erina* & *Holochila* Groups) (Lycaenidae: Polyommatinae)

Kelvyn L. Dunn
e-mail: kelvyn_dunn@yahoo.com

Summary

Detailed observations are provided on courtship and mating in two species of *Candalides* (*Erina* group), and courtship refusal in one species of *Candalides* (*Holochila* group) (Lycaenidae: Polyommatinae) in Victoria. The bizarre refusal dance in *C. consimilis goodingi* is discussed based on three separate observations.

Introduction

All behavior was described as accurately as possible from visual recall, immediately after the observations. Although synoptic carrier details from the two *Candalides* (*Erina*) matings were included in Dunn (2000) the accounts below provide the full courtship and mating details for each encounter. Courtship that is followed by mating seems uncomplicated.

The bizarre and lengthy courtship refusal dance in *C. consimilis goodingi* resembles a delicate slapping 'fight', and the discussion that follows focuses on this behavior. Scott (1973) documented eight standard refusal strategies in butterflies, but none matches this unique response. The term 'dance' was used by Scott to collectively describe all refusal behaviors. If any butterfly species were to literally dance *C. consimilis* must be the prime example.

Primary observations

Candalides hyacinthina – courtship and mating

Locality: Churchill National Park, Victoria.

Habitat: grassy eucalypt open forest, near saddle just beyond easement along North Boundary Track (alt. 135m a.s.l.).

Date: 6 Oct. 1995 at 12:20pm EST (1220h)

Weather: sunny, 21°C

Male observed perching, with both wings opened in V-shape, on debris, logs, and about 30cm above ground on *Lomandra* leaves. Approaching female sighted and pursued by male. Male trailed behind female for short distance, both flying about one metre above ground. Female settled with closed wings on fallen leaf, facing roughly west. Male landed about 5-10mm away to left of female. He faced same direction, but situated slightly behind female with head roughly level with her metathorax or first abdominal segment. Male with closed wings, twisted abdomen in semicircular arc to contact genitalia of female. Upon contact and attachment, male walked backwards, turning gradually to position himself directly aligned behind female. Male, now facing east. Copulating pair then walked around together to complete a reversal of direction, with female now facing east and male west. Pair remained motionless, except for both hind legs of male, whose tarsi repeatedly brushed against area of genital contact. After a minute or so, copulating pair was disturbed and took to flight, with female carrying male. In flight, male hung limply below female. Pair settled several metres distant. Both sexes in reasonable condition, with limited wear and a few minor chips to wing edges.

Candalides acasta – courtship and mating

Locality: The Pines Reserve, Frankston North, Victoria.
Habitat: hilltop in coastal heathland (alt. 60m a.s.l.)
Date: 23 Nov. 1998 at 12:10pm ESST (AEDT) (EST: 1110h)
Weather: sunny, c. 20°C

Hill-topping male intercepted female as she arrived at summit. During investigation stage or courting, adults flew about each other, about one metre above ground for a few seconds. Female quickly flew to sunlit low branch (30–40cm above ground) of shrub on hilltop. She settled with wings closed on curved protruding dead twig, facing outward and slightly downward. Male landed behind female. He began rapidly flicking wings open and shut, then closed his wings and walked down twig, alongside female with head roughly level with her metathorax or first abdominal segment, and curled abdomen around behind her to attempt contact with female genitalia. Once connected male pivoted body by walking sideways around to face in opposite direction to female. Male was now uppermost. When disturbed, male fluttered wings, but female seemed to push off from twig using her legs to get couple airborne. Male then carried limp female during flight. Mating pair flew short distance of about one and half metres. By 12:40pm the pair had separated. Both sexes in fresh condition, but male showed a little wear. The female had an incompletely expanded hind-wing on one side.

Candalides consimilis – courtship refusal

Locality: Hamilton Reserve (near Dewhurst), Upper Beaconsfield, Victoria.
Habitat: hilltop-residential garden, surrounded by pasture, about 200m from stand of open eucalypt forest with understorey of *Leptospermum* and sedges (alt. 220m a.s.l.)
Date: 21 Nov. 2001 at 3:50pm ESST (AEDT) (EST: 1450h)
Weather: sunny, c. 21°C

First courtship observation

Several males in medium condition were seen regularly perching often with closed wings. All faced roughly northwest, towards the sun, casting minimal shadow. They were about 3–4 metres above ground on sunlit, shiny leaves near top of Irish Strawberry tree (*Arbutus unedo* sp.). Perch sites overlooked two-metre high red-flowering *Callistemon* sp. and also about three-metre high *Rhododendron* sp. that had finished flowering.

At 3:50pm, single medium-worn female *C. consimilis*, seen. She had just settled about three metres above ground, with closed wings, facing towards sun, on sunlit leaf of *Rhododendron* shrub adjacent flowering *Callistemon*. Her silver underwing surface reflected brightly against non-reflective green leaves, offering no camouflage. Within three seconds, male in medium condition flew past about 3–4 metres away, then changed direction and headed towards *Rhododendron*. He settled immediately on same leaf as female. Initial direction faced by male after alighting not seen clearly, as observer still several metres away, but seemingly aligned facing female. Female still faced outward (westerly), in same perched style, situated near centre of leaf.

Observer then relocated to raised verandah within 1.5m of butterflies, and at parallel height to view subsequent behavior (20 seconds of behavior missed).

Male directly faced female, both adults horizontal with wings closed. Female still positioned as before. Male crawled about 5mm forward to within 5mm of female's head. Male then began repeated slow antennal contact, brushing or stroking antennae of female at antennal mid section. Antennae of male were slowly alternating, striking downwards, right then left, onto those of

female. Both partners' antennae moved down with each other's in unison; female's left moving down with male's right and vice versa. Simultaneously, male forelegs were repeatedly raised up and down and tarsi seemingly touched female's antennae, or legs, or both. Action resembled a pawing behavior. As observer was located partly behind female, her leg movements were largely obscured, but she seemed to be mimicking male's behavior, making tarsal contact with male. The complicated male behavior was clearly visible as sequence of prancing movements.

During antennal and foreleg tarsal brushing, male momentarily flicked wings twice with pause between each flick, revealing blue upperside (confirming gender). Visually, it seemed each wing flick barely opened wings more than 1mm or possibly 2mm at most. Female did not flick wings at anytime. As both continued foreleg tarsal and antennal brushing, female retreated towards leaf edge. Male correspondingly advanced, continuing same brushing behavior, but with no further wing flicking. Female continued to retreat slowly, until forced to grasp leaf edge. Female now faced vertically upwards, clinging onto leaf edge as male continued same behavior. Female then forced backward until upside down, beneath leaf. With wings still closed, she remained still. Male also remained still with wings closed, on upper surface of leaf, now directly above her. Female not pursued beneath leaf. Male, still facing same direction, remained settled for about five seconds longer, then departed by flight to perch nearby on *Arbutusunedo*. Tactile courtship behavior occurred for about 60 seconds or possibly longer (not timed). Courtship involved some 90 seconds (estimated).

The female was then netted and carefully pinioned through the netting to confirm her sex by examination of forewings. She was released unharmed three metres farther west. In the net she remained surprisingly quiescent, briefly leading me to believe I had missed her.

After release, female returned immediately to same *Rhododendron*. She settled near top of bush (3m above ground) on sunlit leaf with wings in V-shape, and forewing anal margins drawn in parallel body. She remained basking for several minutes, revealing white forewing spot, but showing none of her hindwing. Another male passed by, several metres away, but did not approach. Female later departed and was not seen again, but one or more males continued to perch and patrol nearby.

Second courtship observation: same site but on 22 Nov. 2001 at 1:40pm ESST (EST: 1240h) 26°C.

Courtship: Worn female seen in flight about three metres above ground. Medium conditioned patrolling male approached from similar height and speedily pursued female. Both settled quickly, some two metres away at maintained height, without change to flight style; first female, then male, together on same leaf. This was on same *Rhododendron* tree as previous courtship the day before, but on leaf about 60cm to right and 50cm higher up. Female settled facing outwards (south-west). Male settled aligned facing female. Both sexes stimulated each other using described antennal and tarsal contact. Male flicked wings. Female retreated backward to leaf petiole where she was partially obscured from view by stem. Whilst female struggled for footing, parallel along leaf edge, male made fleeting tarsal contact with female abdominal end as she pivoted to crawl forward (rather than backward) below leaf. She then retreated, head first, below the leaf. Male departed after about five seconds. Female slowly pivoted and crawled forward, back up on to upper surface of leaf and departed about 5-10 seconds later.

Post-courtship behavior: Same female later (five minutes or so) recognised resting again on same *Rhododendron* bush and occasionally high up (3-4m height) on *Arbutusunedo* tree. She usually remained settled for lengthy periods with closed wings and resembled perched male. Even when disturbed she flew only a short distance (about two metres, maintaining height). On one occasion, she basked with wings in V-shape, revealing her forewing white spots, but no males inspected her

at that time. Whilst settled with closed wings on *Arbutusunedo* she was inspected two or three times, possibly by same male or more likely different males (there were several patrolling periodically). Her non-cryptic ventral wing color seemed a strong visual attraction, probably used for species-group recognition by males on inspection flights. On each occasion of visual recognition, male flew directly towards her. Unlike several inspected males, which acially challenged the approaching intruder, the inspected female remained settled. When within a couple of centimetres, and about to land, each male abruptly departed and once again patrolled and perched some distance away (about 3m, at maintained height). Male then seemingly ignored her during subsequent territorial patrols, sometimes passing within one metre of her conspicuous silvery presence.

Third courtship observation: same site but on 22 Nov. 2001 at 5:00pm ESST (EST: 1600h), 26°C.

Later that day, a third tarsal-fighting refusal occurred on same *Rhododendron* at similar height above ground (3m). Again procedure seemed similar, but this time adults were too far away, and blocked by stems and foliage to see continuous activity. For brief moments the prancing tarsal/antennal interactions could be seen between the sexes, as foliage was carefully moved aside. An attempt was made to video some of the glimpsed behavior using digital zoom. It was hoped that this would enable an enhanced description. However, with shifting auto-focus problems and other situational difficulties, the jostling insects proved too small in the resultant image to distinguish finer courtship interactions and more precise movements than already documented by visual recall.

Discussion of behavior - *Candalides cousimilis goodingi*

Courtships occurred sporadically from late morning to mid afternoon. The three witnessed took place adjacent a foraging site attended from time to time by feeding adults of both sexes. Visiting females had presumably arrived to feed, and indeed, the second female, after refusal, subsequently fed at the *Callistemon* flowers. She also fed at what resembled scar tissue, possibly exuding sap at the base of a calyx on the same shrub. The second female courted may have been the same individual courted the day before, as the wing-wear seemed similar on both. Being somewhat worn, and sexually non-compliant, all three females had no doubt already mated.

Wing flicking by the courting male suggests release of a pheromone, possibly from the forewing sex-brand. Male wing flicking also occurred prior to successful copulation in *C. acasta*, but was not noticed in *C. hyacinthina* on that one occasion. However, the behavior is fleeting and easily missed. In the Candalidini, wing flicking by males may be an integral part of courtship irrespective of the female's final response. This behavior differs from that described for the lycaenid *Psychonotus caeli* (Dunn 2001) in which males remained still and the female repeatedly flicked instead. The latter female's behavior is typical of many other butterfly species (Scott 1973), but the absence of wing flicking, fluttering or fanning by the female of *C. consimilis* perhaps suggests she does not disseminate signalling pheromones during refusal.

Given that some males later flew over to inspect her and then quickly departed without any attempt to land and woo her, might however suggest that at times a repulsion pheromone is present about her. Within Nymphalidae, Scott (1973) reported that males of *Heliconius erato* scated on a female pupa waiting for the virgin to emerge, flew away when a mated female was brought near. The female(s) of *C. consimilis* seemingly rejected by patrolling males had been settled for sometime. On the occasions when the dance occurred, the female had just flown to the site, or was intercepted during flight and forced to land. At that time the speculated repulsion pheromone may have dispersed, and so perhaps the 'fighting' dance and simultaneous retreat is a secondary refusal signal used during close encounters. Each time, her retreat was clearly accepted as refusal by the male as he soon flew away.

The intricacy of the prancing gait of both sexes during her retreat is bewildering. During the dance the male did not attempt to connect his abdomen to hers, nor was this possible because of her prancing behavior in which he too participated. Interestingly, as the second female pivoted on the leaf edge to regain footing, the male made brief tarsal contact with her abdomen. However, it seemed this contact was an artefact of her position, the male was probably still trying to continue tarsal 'fighting'.

A similar dance may occur in others members of the *Holochila* group. The courtships in the two members of the *Erina* group were not refusals, and cannot be directly compared. Refusal in these species has not been documented. Tite (1963) recognised separate genera for some groups within *Candalides*, but most recent authors have not recognised these classifications beyond the level of subgenera. Although speculative, this unique prancing dance, if confined to *Holochila*, may suggest the *Holochila* and *Erina* groups are not as closely related ethologically as current taxonomy, based on pupal morphology, might imply. Further observations in these groups are needed.

Acknowledgement

Research in one or more named reserves was conducted under Flora and Fauna Permit Numbers NP 978/171 and RP-98-046 (for terrestrial arthropods).

References

- Dunn, K.L. 2000. Carrying pair behavior and mating times in some Indo-Australian butterflies and day-flying moths. *Victorian Ent.* 30: 63-70
- Dunn, K.L. 2001. Courtship behavior in three Queensland butterflies. *Victorian Ent.* 31: 92-96
- Scott, J.A. 1973. Mating of butterflies. *Journ. Res. Lep.* 11: 99-127
- Tite, G.E. 1963. A revision of the genus *Candalides* and allied genera (Lepidoptera: Lycaenidae). *Bull. Br. Mus. Nat. Hist. (Ent.)* 14(5) 197-259

CALL FOR NOMINATIONS: J.C. 'ZOO' LE SOUËF MEMORIAL AWARD

Nominations for the 2002 award are now invited. Details of Background, nomination, etc. were published in the December 1992 issue of the *Victorian Entomologist* and reproduced in the February 1996 Issue of the *Victorian Entomologist*. These details are also available on the Society's web site <http://www.vicnet.net.au/~vicento>. Nominations must reach the Council at the following address by 30 September 2002:

Secretary, Entomological Society of Victoria Inc.
138 Noone Street, Clifton Hill, 3068



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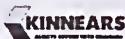
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The Awards aim to recognise businesses, community groups, individuals, local governments, students and the media whose work serves to protect, manage or restore the environment.

The Major Award Categories are

City of Melbourne Triple Bottom Line Award – for the best environmental, social and commercial best practice program for business.

URS Business Enterprise Awards Category - for the best specific environmental initiative; and the environmental best practice program.

Alcoa Community / Individual Awards Category - for the best community based environmental project or initiative; and the special award for outstanding service to the environment.

Local Government Awards Category - for excellence in overall environmental management; best specific environmental initiative.

Global 500 Education / School Award Category - for the best school based project exploring environmental themes or issues.

Media Awards for Environmental Reporting - for the best print submission; the best radio segment; and the best television segment, which has been published, broadcast or telecast in Australia.

Nominations close 5pm, Monday 30th April 2002.

Nominations are now open to all members of the community.
Winners will be announced at an Award Presentation Dinner on May 22nd 2002.

The complete guidelines, entry criteria and nomination form can be found at the UNAA website

www.unaavictoria.com.au

or telephone (03) 9482 3655, fax (03) 9482 5118, email UNAA.VIC@bigpond.com

Further Notes on the species of *Rhinotia* Kirby found at Organ Pipes National Park, Victoria including two new larval host records (Coleoptera: Curculionoidea: Belidae)

Daniel Dobrosak,
66 Wiltonvale Avenue, Hoppers Crossing Vic. 3029

Abstract

Rhinotia filiformis (Germar) was found within Organ Pipes National Park (OPNP) bringing the total number of *Rhinotia* Kirby species collected within this National Park to seven. *Acacia mearnsii* is found to be a larval host of *Rhinotia melanocephala* (Boheman). *Acacia pycnantha* is found to be a larval host of *Rhinotia melanocephala* and *Rhinotia phoenicoptera* (Germar). A Victorian distribution map for *R. filiformis* is provided.

Introduction

Rhinotia Kirby is a genus of slender beetles in the Subfamily Belinae, endemic to Australia, Lord Howe Island, New Guinea, Aru, Mysol, Morty and Solomon Islands (Zimmerman 1994). Many are clothed in a beautiful vestiture of pale coloured setae that are an important character in identification of species. The primary larval and adult host plants are *Acacia* species (Hawkeswood et al 1994, Hawkeswood and Turner 1996, Hawkeswood 1987, Zimmerman 1994, Lawrence and Britton 1994).

Hawkeswood (1990), Hawkeswood et al (1994) and Hawkeswood and Turner (1996) provide detailed notes on the biology and food plants of *Rhinotia haemoptera* Kirby as well as a review of the published literature on this species. Bashford (1997) presented a record of insects reared from the wood of *Acacia dealbata* in Tasmania over a 20 year period. This record included *Rhinotia bidentata* (Donovan), *R. bimaculata* (Pascoe) and *R. haemoptera* Kirby.

Relatively little is known about the host plants and biology of *Rhinotia* species other than *R. haemoptera*. *Rhinotia* species were plentiful within OPNP during the two summers prior to 1999 (Dobrosak 1999). It was surmised that the senescent wattles within the park would contain the immature stages of *Rhinotia* species within the stems of the host plants in spring prior to adult emergence in the summer of 1999/2000.

Methods

Hawkeswood et al (1994) bred the relatively large *R. haemoptera* from billets of *Acacia obtusifolia* that were between 13 to 16 mm diameter. Hawkeswood et al (1994) cut out a parasitised adult of *R. haemoptera* from a live branch of *Acacia elongata* with a diameter of 7 to 10 mm (widest at the swelling). Exit hole diameters in *Acacia obtusifolia* were between 4 and 5.2 mm. Accordingly, dead stems of *A. pycnantha* between 5 and 13.5 mm were collected from OPNP on 7 September 1999 and 12 November 1999. Small stems of *Acacia mearnsii* between 5 and 10.5 mm were collected from Black Wattle Flat within OPNP on 4 November 1999.

The stems were cut into lengths of approximately 200 mm and placed in 1 mm aluminium wire mesh cages as noted by Bashford (1991). The 1 mm wire mesh was readily obtained from a local hardware store (metal fly-wire screen). The insect tight cages were fabricated by simply folding over the edges twice to form envelopes containing the stems. Bags or containers made from plastic are unsuitable for containing emerging wood-boring beetles as they can easily chew through plastic. The wire mesh cages were checked for emerged insects daily.

Larval host records

An adult specimen of *R. melanocephala* (Boheman) was found to have emerged from the stem of *A. pycnantha* (stem collected 12 November 1999, one adult emerged 29 November 1999). The stem diameters were 5 to 13.5 mm. A number of stems were included in the same wire mesh cage and it was not possible to determine the exact host stem.

An adult specimen of *R. melanocephala* was found to have emerged from the stem of *A. nearnsii* (stem collected 4 November 1999, one adult emerged 28 November 1999). The stem diameters were 5.2 to 10.5 mm. Again, a number of stems were included in the same wire mesh cage and it was not possible to determine the exact host stem.

One adult specimen of *R. phoenicoptera* (Germar) was found to have emerged from a stem of *A. pycnantha* (stem collected 7 September 1999, one adult emerged 3 November 1999). This stem was separately enclosed and the exit hole of the beetle was able to be determined. The maximum stem diameter was 6.5 mm and the emergence hole was near circular, 2.9 mm diameter. The emerged adult *R. phoenicoptera* and exit hole is shown in Fig. 3. The stem shown in Fig. 3 was split to reveal the larval chamber (Fig. 4). The chamber of *R. phoenicoptera* was at least 50 mm long, followed the centre of the stem, and was near circular in cross section (approximately 3.1 mm diameter). The diameter was a maximum near the bend to the exit hole (3.3 mm) to allow the relatively long adult to turn through approximately 90 degrees to exit the stem. A small amount of frass was evident in the tunnel approximately 40 mm from the exit hole.

A specimen of *R. phoenicoptera* was cut from the stem of *A. dealbata* collected near Rowville, Victoria on 12 November 2001. This is an existing host record (Zimmerman 1994). Dissection of the stem showed the fully developed adult to be present at the end of a smooth and empty tunnel 60 mm long. The far end of the tunnel showed small amounts of frass, similar to that shown in fig. 4. There was no indication where the exit hole would be formed by the adult.

Additional species record

Dobrosak (1999) recorded six species of *Rhinotia* Kirby from Organ Pipes National Park, 20 km north west of Melbourne, Victoria and listed two other species collected from nearby areas. *Rhinotia filiformis* (Germar) was one of these species, collected from *A. pycnantha* at Exford, 20 km south west of OPNP. *R. filiformis* was found to be common on *A. pycnantha* on a visit to OPNP on 12 November 1999.

Zimmerman (1994) subdivided the genus into 'species' groups based on adult characters including length of hind femora, armature of the fore-femora, elytral carination and the presence or absence of lycid mimicking vestiture. *R. filiformis* falls into Zimmerman's edentate-short-femora group.

R. filiformis has a rust red body colour and is particularly distinct because the head, pronotum, legs and elytra are more or less uniformly covered in minute white setae (Fig. 1 and Fig. 2). Zimmerman (1994) lists *Acacia anceps*, and *A. baileyana* as host plants for this species. It is found in N.S.W., Vic. and S.A. The type locality is Adelaide (Zimmerman 1994). The specimens collected from OPNP showed considerable variation in size. Length, as measured from the front edge of the pronotum to the apex of the elytra was 6.5 mm to 10.7 mm. The Victorian distribution map for this species is shown in Fig. 5. This is based on label data from the Museum Victoria collection with additional label data from Robert Thompson and the author's collection. The distribution map shows this species is found over a relatively wide geographic range in Victoria. Further surveys are needed to determine the distribution in western and north eastern Victoria.

Dobrosak (1999) recorded *Rhinotia* sp. nr. *inconstans* (Lea) to be collected from *Acacia dealbata* at OPNP. A closer examination of leaves of the same stunted *Acacia* on a latter visit showed this plant to be *A. mearnsii* not *A. dealbata*.



Fig 1. dorsal view of *R. filiformis* (Germar) Scale bar =5 mm.

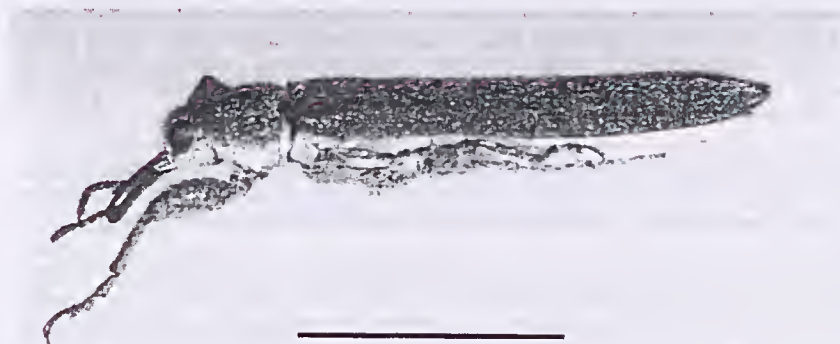


Fig 2. lateral view of *R. filiformis* (Germar) Scale bar =5 mm.

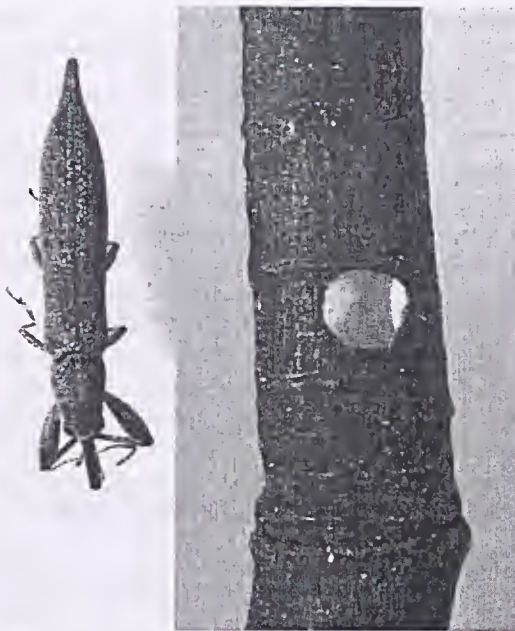


Fig. 3. *R. phoenicoptera* (Germar) emerged from stem of *A. pycnantha* showing exit hole. Scale bar =5 mm.

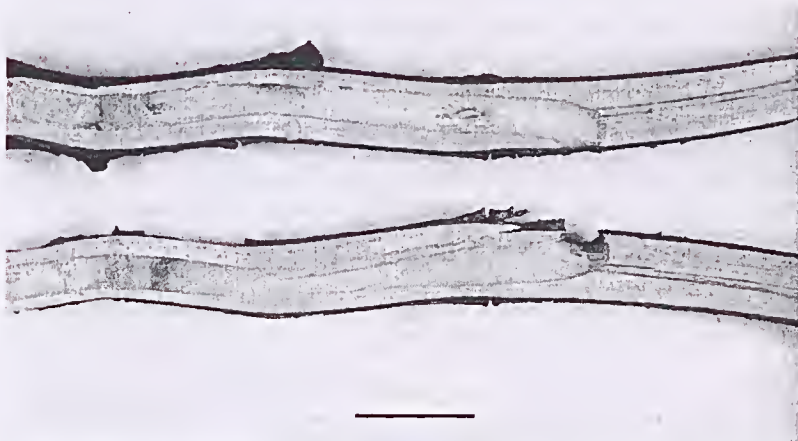


Fig. 4. Section of the stem of *A. pycnantha* in Fig. 3. Showing larval chamber and exit hole of *R. phoenicoptera* (Germar). Scale bar =10 mm.

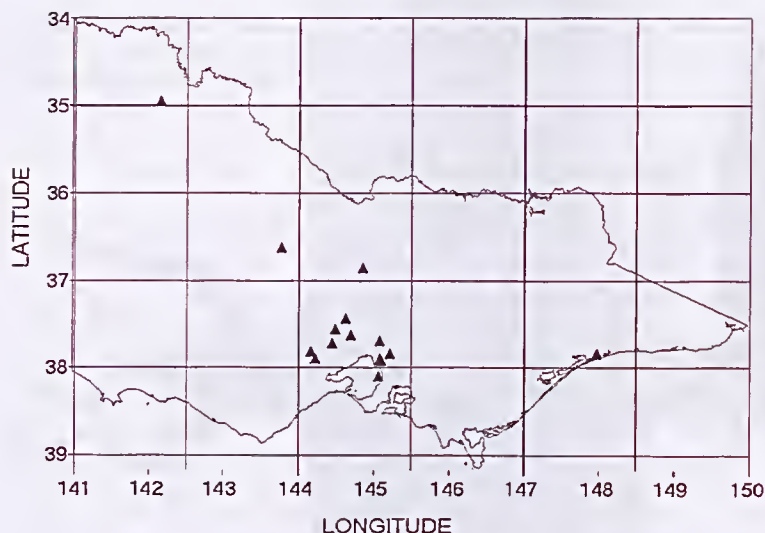


Fig. 5. Victorian distribution of *R. filiformis* (Germar).

Discussion

The larvae of *R. melanocephala* and *R. phoenicoptera* were bred from dead stems of *Acacia* species. No swelling of the host stems or branches was observed in *A. dealbata*, *A. pycnantha* or *A. mearnsii*. This is in contrast to the observations by Hawkeswood et al (1994) of *R. haemoptera* larvae inducing swellings in *Acacia* stems. The swellings may only form when *Rhinotia* larvae are present in 'green' wood or may be peculiar to *A. obtusifolia* and *A. elongata* as noted by Hawkeswood et al (1994). Froggatt (1902) wrote that *R. haemoptera* utilises *A. decurrens*, *A. pubescens* and *A. suaveolens* as larval hosts and causes the bright green bark to turn yellow, indicating *R. haemoptera* females may prefer to oviposit on 'live' wood. In contrast, *R. melanocephala* and *R. phoenicoptera* appear to favour utilisation of dead or near dead stems and this would imply these species are at least a secondary cause of senescence in *Acacias* with the primary cause being attributable to other factors such as defoliation by the fire blight beetle, *Pelioschema orphana* (Erichson) on *A. dealbata* as noted by Bashford (1991).

The examination of tunnels in the stems of the host plants did not allow a conclusion to be drawn about the location of pupation and its relation to the exit hole.

The large variation in size of adult specimens of *R. filiformis* (6.5 mm to 10.7 mm) is probably due to the amount and quality of food available to the larval stages and the most important determinant of this may be the diameter of the host stem at the oviposition location.

Acknowledgments

Grateful thanks are extended to Trevor Hawkeswood for copies of references. Ian Endersby proof-read and provided constructive comments on this paper. Robert Thompson confirmed the

identification of specimens and provided additional distribution records. Ken Walker provided access to Museum Victoria specimens. This work was performed under Department of Natural Resources and Environment Research Permit No. 10000324. The author acknowledges the assistance of Parks Victoria Ranger in Charge, Fiona Smith in providing access to OPNP.

References

- Bashford, R. 1991. Wood-boring Coleoptera and associated insects reared from *Acacia dealbata* Link in Tasmania. *Australian Entomological Magazine*. 19(3) 103-109.
- Bashford, R. 1997. Records of insects associated with *Acacia dealbata* Link. in Tasmania. *Australian Entomologist* 24(3): 109-115.
- Dobrosak, D. 1999. Notes on the species of *Rhinotia* Kirby found at Organ Pipes National Park (Coleoptera: Curculionoidea: Belidae). *Victorian Entomologist* 29(4) 72-78.
- Froggatt, W.W. 1902. Insects of wattle trees. *Agricultural Gazette N.S.W.* 13: 701-720.
- Hawkeswood, T.J. 1990. Notizen zu Biology und Wirtspflanzen des australischen Rüsselkäfers *Rhinotia haemoptera* (Kirby) (Coleoptera, Belidae). *Entomologische Zeitschrift* 100:444-448.
- Hawkeswood, T.J. 1987. *Beetles of Australia*. Angus and Robertson, North Ryde, NSW.
- Hawkeswood, T.J., Turner, J.R. & LeBreton, M. 1994. The biology and host plants of the Australian weevil *Rhinotia haemoptera* (Kirby) (Insecta, Coleoptera, Belidae). *Spixiana* 17(3):237-245.
- Hawkeswood T. J. and Turner J.R. 1996. Further notes on the biology and food plants of the Australian belid weevil, *Rhinotia haemoptera* Kirby (Insecta, Coleoptera, Belidae). *Spixiana* 19(2) 183-186.
- Lawrence, J.F. & Britton, E.B. 1994. *Australian Beetles*. Melbourne University Press, Carlton, Victoria.
- Zimmerman, E. C. 1994. *Australian Weevils (Coleoptera: Curculionoidea)*. Volume 1. CSIRO, Melbourne.

NOTICE OF ANNUAL GENERAL MEETING

Members of the Society are advised that the Annual General Meeting will be held at the La Trobe University, Melbourne Campus, 215 Franklin Street, Melbourne, commencing at 8 p.m. on Friday 19 April 2002.

AGENDA

1. Approval of minutes of AGM held on 20 April 2001 [*Vic. Ent.* 31(3): 33]
2. Treasurer's Report
3. Editor's Report
4. Reports from Committees
5. Election of Council for 2002 - 2003
6. Expression of interest for joining Committees
7. General Business

Nominations for positions on the Council, in writing and signed by the proposer, seconder and nominee, must be in the hands of the President seven days prior to the Annual General Meeting. Nomination forms and Proxy forms may be obtained from the President. Nominations may also be accepted at the Annual General Meeting.

Victorian Dragonfly Common Names

Ian Endersby

56 Looker Road, Montmorency Vic. 3094

In August 2000 I reported that a project was under way to specify common names for Australian Odonata (Endersby 2000). The search was driven particularly by the forthcoming publication of a field guide to the Australian species being prepared for the World Dragonfly Association's conference to be held in Beechworth, Victoria in January 2003.

John Hawking and Günther Theischinger produced a working list which they circulated to dragonfly specialists in the US and the UK who had had involvement in the preparation of their own common name lists and some experience with the Australian fauna. They also called for comment from members of the Queensland-based Australian Dragonfly Society. As a result they have incorporated substantial revisions and now believe the recommendations to be stable (J. Hawking *pers. comm* December 2001).

Reproduced below are the recommended names for those species which are to be found in Victoria. Producing a set of common names that is acceptable to all is a daunting task and John and Günther are to be congratulated for their effort. Personally, I do not need a set of common names to raise my interest in this group but I will be interested to see how widespread they become. As there are so few people in Australia studying dragonflies the process may be slow. The irony is that they will probably get more use in the trip reports of American visitors.

References

Endersby, I. (2000). Common Names for Dragonflies. *Victorian Entomologist* 30: 53-54.

HEMIPHLEBIIDAE

Hemiphlebia mirabilis

Ancient Greenling

SYNLESTIDAE

Synlestes weyersii

Bronze Needle

LESTIDAE

Austrolestes analis

Slender Ringtail

Austrolestes annulus

Blue Ringtail

Austrolestes aridus

Inland Ringtail

Austrolestes cingulatus

Metallic Ringtail

Austrolestes ia

Iota Ringtail

Austrolestes leda

Wandering Ringtail

Austrolestes psyche

Cup Ringtail

MEGAPODAGRIONIDAE

Austraargiolestes calcaris

Powdered Flatwing

Austroargiolestes icteromelas

Common Flatwing

Griseorgiolestes eboracus

Greyched Flatwing

Griseorgiolestes intermedius

Southern Grey Flatwing

PROTONEURIDAE

Nasasticta solida

Orange Threadtail

ISOSTICTIDAE

Labidosticta vollisi

Large Wiretail

Rhadinosticta simplex

Powdered Wiretail

COENAGRIONIDAE

Austrogrion watsani

Eastern Billabongfly

Austrocnemis splendida

Splendid Longlegs

Caliopteron billinghursti

Large Riverdamselfly

Caenagrion lyelli

Swamp Bluet

Ischnura ourora

Aurora Bluetail

Ischnura heterosticta

Common Bluetail

Pseudagrion oureofrons

Gold-fronted Riverdamselfly

Xanthagrion erythroneurum

Red & Blue Damselfly

DIPHLEBIIDAE

Diphlebia lestoides
Diphlebia nymphoides

AUSTROPETALIIDAE

Austropetalia tanyana

TELEPHEBIIDAE

Austroaeschna atrata
Austroaeschna flavamaculata
Austroaeschna inermis
Austroaeschna multipunctata
Austroaeschna parvistigma
Austroaeschna pulchra
Austroaeschna subapicalis
Austroaeschna unicarnis
Dendroaeschna canpersa
Natooeschna sagittata
Spinaeschna tripunctata
Telephlebia brevicauda

AESHNIDAE

Aeshna brevistyla
Hemianax papuensis

GOMPHIDAE

Antipadogomphus acalythus
Austragomphus angelarum
Austrogomphus bifurcatus
Austragomphus carnotus
Austragomphus guerini
Austragomphus ochraceus
Hemigomphus gaudii
Hemigomphus heteroclytus

SYNTHEMISTIDAE

Archaeosynthemis orientalis
Eusynthemis brevistyla
Eusynthemis guttata
Eusynthemis tillyardi
Eusynthemis virgula
Parasynthemis regina
Synthemis eustalacta

CORDULIIDAE group

Apacardulia macraps
Austracordulia refracta
Cordulephya pygmaea
Hemicordulia australiae
Hemicardulia tau
Procordulia jacksaniensis

LIBELLULIDAE

Austrothemis nigrescens
Crocathemis nigrifrons
Diplacodes bipunctata
Diplacodes haematodes
Diplacodes melanopsis
Nannaphlebia risi
Nannophya australis
Nannophya dalei
Nannophya pygmaea
Orthetrum caledanicum
Orthetrum villasavittatum
Pantala flavescens
Trapezostigma laewii

Whitewater Rockmaster
 Arrowhead Rockmaster

Alpine Redspot

Mountain Darner
 Alpine Darner
 Whitewater Darner
 Multi-spotted Darner
 Swamp Darner
 Forest Darner
 Cone-head Darner
 Unicorn Darner
 Wide-faced Darner
 Southern Riffle Darner
 Southern Cascade Darner

Blue-spotted Hawker
 Australian Emperor

Southern Dragon
 Murray River Hunter
 Dark Hunter
 Unicorn Hunter
 Yellow-striped Hunter
 Jade Hunter
 Southern Vicetail
 Stout Vicetail

Eastern Brown Tigertail
 Small Tigertail
 Southern Tigertail
 Mountain Tigertail
 Golden Tigertail
 Royal Tigertail
 Swamp Tigertail

Nighthawk
 Eastern Hawk
 Common Shutwing
 Australian Emerald
 Tau Emerald
 Eastern Swamp Emerald

Swamp Flattail
 Black-headed Skimmer
 Wandering Percher
 Scarlet Percher
 Black-faced Percher
 Common Archtail
 Australian Pygmyfly
 Eastern Pygmyfly
 Northern Pygmyfly
 Blue Skimmer
 Fiery Skimmer
 Wandering Glider
 Common Glider

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The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

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Contributions may be typed on A4 paper or *preferably* sent to the Hon. editor on an IBM formatted disk in *Microsoft Word for Windows, WordPerfect* or any recognised word processor software with an enclosed hard copy. Contributions may also be E-mailed to Internet address: ddobrosak@mira.net or ddobrosak@hotmail.com

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DIARY OF COMING EVENTS

Friday 15 February General Meeting

Ian Endersby will present a talk on "Collecting and Sampling Insects" followed by a practical demonstration on "insect setting techniques" by Daniel Dobrosal.

Peter Carwardine will present a series of Slides of Insects.

Thursday 14 March Council Meeting

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed, and authors alone are responsible for the views expressed.

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